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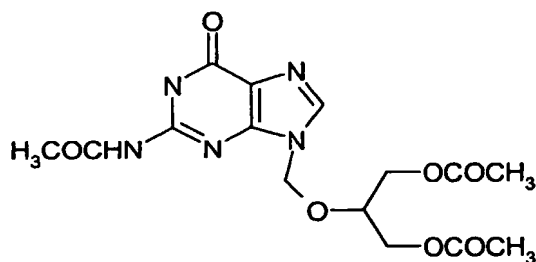
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(54) Title: PROCESS FOR THE PREPARATION OF GANCICLOVIR



(I)

(57) Abstract: The present invention relates to a
process for the preparation of N2-Acetyl-9-(1,3-di-
acetoxy-2-propoxymethyl) guanine, referred to here
as N-9 alkylated isomer of structural formula I, and
to the use of this compound as an intermediate for
the preparation of antiviral compound, ganciclovir.

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
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According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 074 306 A (MERCK & CO INC) 16 March 1983 (1983-03-16) Ex. 1, steps B, C	1-23
X	EP 0 165 164 A (MERCK & CO INC) 18 December 1985 (1985-12-18) Ex. 1, steps B, C	1-23
X	WO 03/033498 A (BABU JAYACHANDRA SURESH ; KHANDURI CHANDRAS HAS (IN); RAY PURNA CHANDR) 24 April 2003 (2003-04-24) Ex. 8-10	1-22
X	US 5 792 868 A (KOGUCHI YOSHIHITO ET AL) 11 August 1998 (1998-08-11) Process as described in ex. 6	23
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Patent family members are listed in annex.

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 532 878 A (AJINOMOTO KK) 24 March 1993 (1993-03-24) Ex. 5	18-22
X	EP 0 138 683 A (MERCK & CO INC) 24 April 1985 (1985-04-24) Ex. 14	18-22

INTERNATIONAL SEARCH REPORT

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PCT/IB 03/04866

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 0074306	A	16-03-1983	AT 34750 T	15-06-1988
			AU 8755282 A	03-03-1983
			CA 1300622 C	12-05-1992
			CA 1287832 C2	20-08-1991
			DE 3278561 D1	07-07-1988
			DK 379782 A	27-02-1983
			EP 0074306 A2	16-03-1983
			ES 8402837 A1	16-05-1984
			ES 8406547 A1	01-11-1984
			GR 76861 A1	04-09-1984
			JP 2016499 C	19-02-1996
			JP 4217940 A	07-08-1992
			JP 7029979 B	05-04-1995
			JP 2011429 C	02-02-1996
			JP 5286974 A	02-11-1993
			JP 7014938 B	22-02-1995
			JP 1792025 C	14-10-1993
			JP 4080914 B	21-12-1992
			JP 58077881 A	11-05-1983
			NZ 201662 A	11-07-1986
			PT 75463 A , B	01-09-1982
			US 4816447 A	28-03-1989
			ZA 8206196 A	25-04-1984
EP 0165164	A	18-12-1985	US 4816447 A	28-03-1989
			EP 0165164 A1	18-12-1985
			JP 1992346 C	22-11-1995
			JP 7025760 B	22-03-1995
			JP 61040289 A	26-02-1986
WO 03033498	A	24-04-2003	WO 03033498 A2	24-04-2003
US 5792868	A	11-08-1998	JP 3225545 B2	05-11-2001
			JP 5078329 A	30-03-1993
			US 5688948 A	18-11-1997
			DE 69229492 D1	05-08-1999
			DE 69229492 T2	17-02-2000
			EP 0532878 A2	24-03-1993
			ES 2132099 T3	16-08-1999
			US 5336770 A	09-08-1994
EP 0532878	A	24-03-1993	JP 3225545 B2	05-11-2001
			JP 5078329 A	30-03-1993
			DE 69229492 D1	05-08-1999
			DE 69229492 T2	17-02-2000
			EP 0532878 A2	24-03-1993
			ES 2132099 T3	16-08-1999
			US 5792868 A	11-08-1998
			US 5688948 A	18-11-1997
			US 5336770 A	09-08-1994
EP 0138683	A	24-04-1985	EP 0138683 A2	24-04-1985
			JP 60092286 A	23-05-1985
			US 4897479 A	30-01-1990